

Removal Recommendation Restrictions on Dredging Activities Beneficial Use Impairment White Lake Area of Concern

Issue

The Restrictions on Dredging Technical Committee recommends the removal of the Restrictions on Dredging Activities Beneficial Use Impairment (BUI) for the White Lake Area of Concern (AOC) based on the review of relevant documentation pursuant to the process and criteria set forth in the *Guidance for Delisting Michigan's Great Lakes Areas of Concern (Guidance)* (DEQ, 2008). This recommendation is made by the Restrictions on Dredging Technical Committee, comprised of staff from the United States Environmental Protection Agency (USEPA), the Michigan Department of Environmental Quality (DEQ), and the United States Army Corps of Engineers (COE) and with the support of the White Lake Public Advisory Council (PAC).

Background

White Lake is a 10.4 km² drowned river mouth lake located in western Michigan. The lake was listed as an AOC by the International Joint Commission (IJC) in 1987 because of severe environmental impairments related to the historic discharge of municipal and industrial wastes. The Restrictions on Dredging Activities BUI was listed because concentrations of chromium, lead, and zinc exceeded the dredge spoil limits (material characterized by EPA as heavily polluted and thus subject to special disposal restrictions) in Tannery Bay, in Occidental Chemical basin site (east of Dowies Point), and in other deep basins in the lake. The COE characterized other contaminant concentrations (mercury, arsenic, cadmium, copper, and nickel) as decreasing from 1972 to 1986 and that navigational channel sediments were suitable for open water disposal (White Lake PAC, 2008).

Eight BUIs are associated with the White Lake AOC: Restrictions on Dredging Activities, Loss of Fish and Wildlife Habitat, Degradation of Fish and Wildlife Populations, Degradation of Aesthetics, Restrictions on Drinking Water Consumption or Taste and Odor Problems, Restrictions on Fish Consumption, Eutrophication or Undesirable Algae, and Degradation of Benthos. According to a February 2011 COE project fact sheet, the federally maintained navigation channel is almost 2,000 feet long between Lake Michigan and White Lake, and the maintained depth is 12 feet. White Lake serves as an important Harbor of Refuge and supports charter fishing and recreational boating activities (COE, 2011).

Removal Criteria

The *Guidance* has two tiers for the Restrictions on Dredging BUI, the first of which applies to the White Lake AOC. This BUI is considered restored when:

- There have been no restrictions on routine commercial or recreational navigational channel dredging by the COE, based on the most recent dredging cycle, such that special handling or use of a confined disposal facility is required for dredge spoils due to chemical contamination.

OR, in cases where dredging restrictions exist:

- A comparison of sediment contaminant data from the commercial or recreational navigation channel in the AOC indicates that contaminant levels are not statistically different from other comparable, non-AOC commercial or recreational navigation channels.

The attached excerpt from the *Guidance* (pages 31-32) includes the rationale for the delisting criteria (Attachment A).

Process

The Restrictions on Dredging Activities Technical Committee was formed in 2008 to bring together state and federal agency dredging experts and technical staff. The Technical Committee's purpose was to determine whether restrictions on dredging activities due to sediment contamination currently exist in the 12 Michigan AOCs listed as having this BUI.

The Technical Committee was tasked with: 1) developing a framework to consistently assess the Restrictions on Dredging BUI in Michigan's AOCs, and 2) coordinating data assessment and providing supporting documentation to remove the BUI in AOCs that have met the first tier of the *Guidance* criteria. The Technical Committee relied on the COE to identify the preferred disposal option for each AOC. The DEQ made determinations whether there were restrictions on disposal locations for dredge spoils. For example, some materials may not be suitable for unrestricted upland disposal or for use as beach nourishment material. If use of the preferred option is restricted due to chemical contamination, a restriction on dredging activities exists. If there is no restriction on use of a preferred disposal option due to chemical contamination, the BUI can be removed.

Analysis

DEQ AOC program staff solicited comments regarding the redesignation of this BUI from the Technical Committee. In accordance with the *Guidance*, the Dredging Technical Committee reviewed the most recent dredge cycle data provided by the COE, which was collected in 2008.

According to the attached COE White Lake Dredging History Summary (Attachment B), the White Lake navigation channel was dredged nearly every year between 1964 and 1976. In each of those years, the COE determined that the dredge spoils were suitable for open water disposal. Between 1982 and 2010, the channel was dredged seven times. In each of those years, the COE utilized the dredged materials for beach nourishment in the area. The most recent COE sediment analysis from the 2008 dredge cycle indicate that contaminant concentrations in the dredge spoils were less than USEPA open water disposal criteria (FutureNet, 2008). Based on those results, dredged sediments from the navigation channel were approved for and used in the federal beach nourishment program for Lake Michigan. No special handling or use of a confined disposal facility was required for the spoils generated by the dredging of the White Lake navigation channel.

The preferred disposal option for the White Lake harbor is Lake Michigan beach nourishment. The Technical Committee determined that there are no restrictions on routine navigational channel dredging by the COE because there are no restrictions on the preferred disposal method. Therefore, according to the *Guidance* restoration criteria outlined above, this BUI can be considered restored.

Recommendation

Based upon review of the data (FutureNet, 2008) and technical input from the DEQ, the USEPA, and COE project staff, removal of the Restrictions on Dredging Activities BUI in the White Lake AOC is recommended. The data and removal recommendation have been shared and discussed with individual White Lake PAC members and were discussed at the September 1, 2011 PAC meeting. Following that meeting, the PAC provided a letter of support to the DEQ for the removal of this BUI.

Prepared by: John Riley, AOC Coordinator
Great Lakes Management Unit
Office of the Great Lakes
Michigan Department of Environmental Quality
September 6, 2011

Attachments

- A – Restrictions on Dredging Activities; pages 31-32 of the Guidance for Delisting Michigan's Great Lakes AOCs
- B – COE White Lake Annual Report/Contract Dredging Report, January 12, 2011

References

- FutureNet Group, Inc. 2008. Sediment Sampling and Analysis Report White Lake Harbor, Michigan. Contract No. W911XK-07-D-0004, Task Order #006. Prepared for the United States Army Corps of Engineers, Detroit District, Detroit, Michigan.
- International Joint Commission. 1987. Revised Great Lakes Water Quality Agreement of 1978.
- Michigan Department of Environmental Quality. 2008. *Guidance for Delisting Michigan's Great Lakes Areas of Concern*, revised. MI/DEQ/WB-06-001.
- United States Army Corps of Engineers. 2011. White Lake Harbor Fact Sheet.
- United States Army Corps of Engineers. 2011. Annual Report/Contract Dredging Report, Detroit District, Operations Office.
- White Lake Public Advisory Council. 2008. Target of Delisting the Restrictions on Dredging Activities Beneficial Use Impairment Delisting Target.

Attachment A

2008 Guidance for Delisting Michigan's Great Lakes Areas of Concern

Restrictions on Dredging Activities

Significance in Michigan's Areas of Concern

Twelve AOCs in Michigan have identified restrictions on dredging as impaired or potentially impaired (all except Deer Lake and Torch Lake). This BUI addresses the requirement for special handling or disposal of commercial or recreational navigation channel dredge spoils due to chemical contamination of sediments. This BUI was originally identified for some AOCs based on the existence of contaminated sediments, not on whether there were actual restrictions on dredging in the AOC.

Michigan Restoration Criteria and Assessment

This BUI will be considered restored when:

- There have been no restrictions on routine commercial or recreational navigational channel dredging by the U.S. Army Corps of Engineers (COE), based on the most recent dredging cycle, such that special handling or use of a confined disposal facility is required for dredge spoils due to chemical contamination.

OR, in cases where dredging restrictions exist:

- A comparison of sediment contaminant data from the commercial or recreational navigation channel (at the time of proposed dredging) in the AOC indicates that contaminant levels are not statistically different from other comparable, non-AOC commercial or recreational navigation channels.

Rationale

Practical Application in Michigan

Dredging sediments in the Great Lakes and connected waterways requires state and federal approvals that regulate the extent of dredging, disposal of dredge spoils, and pre-dredge studies. Restrictions on dredging is defined as special handling or use of a confined disposal facility is required for dredge spoils due to chemical contamination. Open water disposal of any clean or contaminated dredge spoils in the Great Lakes or connected waterways is not routinely permitted in Michigan. As a result, use of disposal options (e.g., confined disposal facility) other than open water is not automatically a restriction on dredging. This restoration criterion applies only to the commercial and recreational navigational channels in the Great Lakes and connected waterways that are maintained by the COE.

1991 IJC General Delisting Guideline

When contaminants in sediments do not exceed standards, criteria, or guidelines such that there are restrictions on dredging or disposal activities.

The IJC general delisting guideline for the BUI is presented here for reference. The Practical Application in Michigan subsection above describes application of specific criteria for restoration based on existing Michigan programs and authorities.

State of Michigan Programs/Authorities

As part of existing planning and regulatory requirements, the MDEQ and the COE evaluate the environmental impacts associated with any proposed navigational dredging and disposal projects.

In assessing restoration of this BUI, the State, in consultation with the COE and the PAC, will conduct an evaluation of the most recent navigational dredging projects in an AOC to determine whether there have been restrictions on the dredging or disposal due to sediment contamination. For those AOCs where there have been dredging restrictions, the MDEQ will coordinate with the COE to evaluate sediment contaminant data from the commercial or recreational navigation channel and compare it to sediment data collected from other, non-AOC commercial or recreational navigational dredging sites. Comparison will be based on those contaminants which are causing the dredging restrictions. Non-AOC comparison sites will be chosen based on geographic similarity, type of navigation channel and dredging time frame. The State will evaluate whether the AOC commercial or recreational navigation channel sediment has statistically higher levels of contaminants than non-AOC reference navigation channels.

Some local AOC communities also have programs for monitoring water quality and related parameters which may be applicable to this BUI. If an AOC chooses to use local monitoring data for the assessment of BUI restoration, the data can be submitted to the MDEQ for review. If the MDEQ determines that the data appropriately address the restoration criteria and meet quality assurance and control requirements, they may be used to demonstrate restoration success.

All non-navigational channel dredging is evaluated under federal and state authorities and any special circumstances are addressed in the permit process, including contamination. These programs apply across the state, not just in AOCs.

Briefing Paper

Removal Recommendation: Restrictions on Dredging Activities BUI, White Lake AOC

Page 6

Attachment B

**Annual Report/Contract Dredging Report, Detroit District, Operations Office
US Army Corps of Engineers
January 12, 2011**



US Army Corps
of Engineers

Wednesday, January 12, 2011

ANNUAL REPORT/CONTRACT DREDGING REPORT, DETROIT DISTRICT, OPERATIONS OFFICE

FY	START	COMPLETION	CUBIC YARDS	COST	CPY	CONTRACTOR	CONTRACT NUMBER	PLACEMENT/DREDGE AREA
WHITE LAKE HARBOR, MI								
1964			33,554	\$31,968	\$0.95	GOVT/HAINS		
1965			58,740	\$39,610	\$0.67	GOVT/HAINS		
1966	6/18/1966	6/24/1966	40,545	\$23,521	\$0.58	GOVT/HAINS		
1968	6/7/1968	6/16/1968	86,001	\$58,232	\$0.68	GOVT/HAINS		
1969	6/25/1969	6/30/1969	19,770	\$18,915	\$0.96	GOVT/HAINS		
1970	7/1/1969	7/4/1969	54,309	\$38,110	\$0.70	GOVT/HAINS		
1971	5/6/1971	5/11/1971	30,991	\$21,388	\$0.69	GOVT/HAINS		OPEN WATER
1972	6/26/1972	6/30/1972	28,327	\$21,879	\$0.77	GOVT/HAINS		OPEN WATER
1973	5/21/1973	5/31/1973	3,750	\$19,053	\$5.08	GOVT/TOMPKINS		OPEN WATER
1973	6/5/1973	6/10/1973	44,471	\$26,508	\$0.60	GOVT/HAINS		OPEN WATER
1974	6/7/1974	6/13/1974	32,110	\$33,384	\$1.04	GOVT/HAINS		OPEN WATER
1975	6/14/1975	6/22/1975	44,495	\$53,222	\$1.20	GOVT/HAINS		OPEN WATER
1976	5/8/1976	5/17/1976	55,636	\$91,187	\$1.64	GOVT/HAINS		OPEN WATER
1982		10/14/1982	38,000	\$121,000	\$3.18	C-WAY	DACW35-82-C-0044	BEACH 8'CNTR-OHWM
1985	9/3/1985	9/30/1985	38,000	\$222,300	\$5.85	KING	DACW35-85-C-0047	BEACH N-1 1000'-2300'N (13500CY) S-1 1000'-4000'S (10551CY) S-2 6700'-10000'S (13949) BORROW AREA
1991	8/7/1991	8/30/1991	38,000	\$117,596	\$3.09	KING	DACW35-91-C-0016	BEACH 1000'-2300'N OF HARBOR CHANNEL BORROW AREA 14+00W - 11+00E
1995	6/4/1996	6/10/1996	37,742	\$197,531	\$5.23	KING	DACW35-95-C-0082	BEACH 3000'-5000' & 6100'-8000'S OF S PIER 14+00W-11+00E 12'MINIMUM THROUGHOUT - 20'MAXIMUM IN FLARE - 15'MAXIMUM IN CHANNEL
2001	6/21/2001	6/23/2001	6,083	\$59,133	\$9.72	MCM MARINE	DACW35-01-C-0016	BEACH 2000'-4000' S OF S PIER 4'CNTR-OHWM CRITICAL SHOALS
2008	8/11/2008	8/27/2008	14,870	\$207,270	\$13.94	KING	W911XK-08-C-0014	BEACH 1000-2500'S OF S BREAKWATER 12'CNTR-+4' 11+00W - 4+00E 12' +1'
2010	7/7/2010	7/12/2010	9,262	\$0	\$0.00	LUEDTKE	W911XK-09-D-0002	BEACH CRITICAL SHOALS
2011			0	\$0	\$0.00		W911XK-11-D-00	BEACH CRITICAL SHOALS
Total			714,656	\$1,401,807				



White Lake Public Advisory Council

September 2, 2011

Mr. John Riley
Office of the Great Lakes
Michigan Department of Environmental Quality
525 West Allegan St.
P.O. Box 30273
Lansing, MI 48909

Dear Mr. Riley:

Over the past couple months the White Lake Public Advisory Council has been reviewing materials and documents for the final delisting of the Restrictions on Dredging BUI. As part of this process we have reviewed the 2008 navigation channel sediment data collected for the US Army Corps of Engineers as well as the determinations of DEQ Water Resource Division and Remediation Division staff. Data from the US Army Corps of Engineers and DEQ staff statements concur that the sediments from the navigational channel would be appropriate for unrestricted upland disposal and for beach nourishment.

White Lake PAC members are concerned that contaminated sediments remain in other areas of White Lake, outside the federally maintained navigation channel, which are not addressed by the Dredging BUI. However, we trust that the evaluation of those areas and the impacts on White Lake will be addressed through the mechanisms integrated into the targets and indicators associated with the Degradation of Benthos BUI and through existing permitting and regulatory programs.

Lastly, the PAC has also reviewed your Restrictions on Dredging BUI Removal Recommendation document. After lengthy discussions prior to and during our September 1, 2011 meeting, the PAC voted unanimously to support the removal of the Restrictions on Dredging BUI. Please proceed with the Public Notice process and other document preparation necessary to remove this BUI.

Sincerely,

Jeff Auch, Chair
White Lake Public Advisory Council
White Lake Area of Concern